REMARKS/ARGUMENTS

The claims are 1-4. Claim 1 has been amended to better define the invention. Support for the claims may be found, *inter alia*, in the disclosure at page 3, second paragraph, and the paragraph bridging pages 5-6. Reconsideration is expressly requested.

Claims 1-4 were rejected under 35 U.S.C.§ 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner stated that the limitation "developing said emulsion *by attacking the metal with salts or acids* on the areas unprotected by the emulsion" does not correspond to the invention as described in the Specification. The Examiner also stated that this rejection could be overcome by amending claim 1 to make attacking of the metal with salts or acids a separate step from the step of developing the emulsion.

In response, Applicant has amended claim 1, *inter alia*, to make attacking the metal with salt or acids a separate step from the step of developing the emulsion, which it is respectfully submitted overcomes the Examiner's objection on the basis of

§ 112, first paragraph.

Claims 1-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0007558 to *Sim* in view of U.S. 5,920,977 to *Wyckoff et al* for the reasons set forth on page 3-4 of the Office Action. Essentially the Examiner's position was (1) that *Sim* discloses the photographic engraving process recited in the claims except for the protective film being a transparent enamel and the temperature range at which the photosensitized glue is heated for appropriate etching, (2) that *Wyckoff et al* discloses use of a porcelain enamel as a protective coating, (3) that the temperature range is within the skill of the art, and (4) that it would have been obvious to use the porcelain enamel of *Wyckoff et al* in the process of *Sim* and to heat the photosensitized glue of *Sim* to a temperature of 200-400 degree C for appropriate etching characteristics.

This rejection is respectfully traversed.

As set forth in claim 1, as amended, Applicant's invention provides a photographic engraving process to provide an engraving

with high definition on a contoured metal surface. This process serves to engrave metals and/or ceramics covered with metal in an optimal manner and produces high definition engravings. According to the process as set forth in claim 1, as amended, a photographic positive or negative of the image to be reproduced in the engraving is obtained, and the metal surface where the engraving is to be made is cleaned, degreased, polished, and impregnated with photosensitive emulsion. Contact is made between the surface to be engraved and the photographic positive or negative using a press in which exposing radiation passes through a pressure-applying medium which deforms to adapt to the contours of the emulsion-bearing surface. The surface is then exposed to actinic light through the photographic positive or negative and the pressure-applying medium, the emulsion is developed, and the metal surface is attacked with salts or acids on the areas unprotected by emulsion. The protective emulsion is stripped, the remains of the salts or acids are cleaned, and a protective layer of transparent enamel is applied.

Because the articles which are to be decorated are not necessarily flat, Applicant's engraving process as set forth in claim 1, as amended, uses a press designed to adapt to the shape

of the workpiece. Conventionally in the exposure of a photographic emulsion on a metal surface, for example the sensitized surface of an offset printing plate, the sheet metal of the plate conforms to the more rigid transparent body through which the radiation passes before impinging on the emulsion on the plate surface. In contrast, with Applicant's invention as set forth in claim 1 as amended, the surface bearing the photographic emulsion is not flexible so the pressure medium which holds the film in contact with the surface of the workpiece itself deforms in order to adapt to the shape adopted by photographic film when pressed against the surface of the workpiece. In this way, high-definition photo engraving is achieved with Applicant's process.

The primary reference to *Sim* fails to show a photographic engraving process that provides an engraving of high definition on a contoured metal surface. *Sim* discloses a photo application method by means of a film. In other words, the process involves a transfer, not an engraving as in Applicant's claim 1 as amended. Moreover, *Sim's* process is for the purpose of providing a copper plate, which is to be coated with a painting material, with an etched surface using an impregnating agent to form only

about 1,000 to 1,600 dots per cm^2. In other words, *Sim's* process does not achieve a definition of more than 40 lines per centimeters, which dots are visible to the human eye and therefore are not high-definition as recited in Applicant's claims. The maximum that *Sim* achieves is 1,600 dots per cm^2, which equals 40 x 40 real lines per linear centimeter, whereas high-definition as recited in Applicant's claim 1 as amended, starts at 2916 dots per cm^2 or 54 x 54 real lines per linear centimeter where the dots are no longer visible to the human eye. In contrast to *Sim's* process, Applicant's process is able to provide an engraving with high definition which can be achieved as recited in Applicant's claim 1, as amended, by using a press in which exposing radiation passes through a pressure-applying medium which deforms to adapt to the contours of the emulsion-bearing surface. There is no disclosure or suggestion of this press in *Sim*.

The defects and deficiencies of the primary reference to *Sim* are nowhere remedied by the secondary reference to *Wycoff et al*. Like *Sim*, *Wycoff et al*. is not for a photo engraving process. Instead, *Wycoff et al*. is directed to a process for applying coatings which will protect the porcelain from fire, the

elements, etc. Although *Wycoff et al.* discloses encapsulating an alloy substrate in a photo-resist, exposing the photo-resist to ultraviolet light, removing portions of the photo-resist not exposed to the UV light, and etching areas of the alloy substrate, there is no disclosure or suggestion of using these steps in the different process of photo engraving which involves different materials, salts and acids, and which materials may even have to be varied in degreasing, cleaning or preparing the piece to be photo engraved. There is also no disclosure or suggestion in *Wycoff et al.* of using Applicant's specific process steps as recited in claim 1, as amended, including making contact between the surface to be engraved and the photographic positive or negative, using a press in which exposing radiation passes through a pressure-applying medium which deforms to adapt to the contours of the emulsion-bearing surface.

Accordingly, even if one were to make the hypothetical combination as suggested by the Examiner, one would still not achieve Applicant's invention as recited in claim 1, as amended, as neither *Sim* nor *Wycoff et al.* is directed to a photographic engraving process or uses a press in which exposing radiation passes through a pressure applying medium which deforms to adapt to the contours of an emulsion bearing surface. Moreover, the

hypothetical combination would not achieve Applicant's photographic engraving process which provides an engraving with high-definition on a contoured metal surface. Not even the finest laser on the market can achieve the high-definition achieved with Applicant's process. Accordingly, it is respectfully submitted that the claims are patentable over the cited references.

In summary, claim 1 has been amended. In view of the foregoing, it is respectfully requested that the claims be allowed and that this case be passed to issue.

Respectfully submitted,
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I hereby certify that this correspondence is being sent by facsimile-transmission to the Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 27, 2006.

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